

REMARKS

I. Status of the Claims

Claims 1-27 are pending in the application. Claim 28 was previously cancelled. Claims 1- 22, 24, and 27 stand rejected. Claims 1-27 have been objected to. By this Amendment, Applicants amended claims 1-26 to more particularly point out and distinctly claim what Applicants regard as the invention. Support for the amendments can be found in the as-filed specification as well as in the previously presented claims. For example, support for the amendments to claim 1 can be found throughout the specification, for example, at paragraphs [0041], [0042], and [0055] and Figures 2, 4, 6, 7a, 7b, 10a, and 10b in U.S. Patent Application Publication No. US 2007/0196,710 ("the '710 publication"), which is the publication of the instant application.

No new matter has been introduced. Applicants respectfully request reconsideration of the application in view of the foregoing amendments and the following remarks.

II. Amendments to the Specification

Applicants have amended the paragraph at page 10, line 10, of the as-filed specification to correct an obvious error in the numeral for the cathodic sealing gaskets 8b. In that paragraph, the anodic sealing gaskets are referred to as "8a" and the cathodic sealing gaskets are referred to as "8b." However, the paragraph also recites: "the cathodic sealing gaskets 8b 8a have a structure equivalent to the one shown in FIG. 3a." The error is obvious and inadvertent. The amendment introduces no new matter. Applicants respectfully request the entry of this amendment.

Amendments to the paragraph at page 13, the paragraph at page 15, and the paragraph bridging pages 15 and 16 are made to correct a printing error. Instead of using a hyphen to indicate a range of values in these claims, a division symbol "÷" was used. Applicants submit that these errors are obvious and inadvertent and request the entry of the amendments.

III. Amendments to the Drawings

Figure 1 has been amended to correct an inadvertent error - one of the cathode sealing gasket 8b was erroneously labeled as "8a." Figure 1 illustrates a fuel cell stack having four reaction cells, each reaction cell has a polymer membrane 4, an anode sealing gasket 8a on its left, and a cathode sealing gasket 8b on its right, except the second reaction cell from the left, which shows gasket 8a on both sides of the polymer membrane 4. One skilled in the art would readily recognize this printing error. Applicants respectfully request the entry of this amendment drawing sheet.

IV. Claim Objections

Claims 1 is objected to because of an inadvertent error, and claims 2-27 are objected to due to their dependency on claim 1. See Office Action at 3. Claim 12 and 13 are also objected to because of inadvertent errors. *Id.* at 3-4. Applicants submit that the amendments to the claims render the objections moot and respectfully request the withdrawal of the objections.

V. Claim Rejections under 35 U.S.C § 112

Claims 13 and 15 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite due to lack of antecedent basis for the recitation of "the adjacent

reaction cell" in claim 13, "said feed openings" and "said perimetrical portion" in claim 15. *Id.* at 4. Applicants submit that the amendments to the claims have rendered the rejections moot and request the withdrawal of the rejections.

VI. Claim Rejections under 35 U.S.C § 102

Claims 1-3, 5-12, 14-21, 24, and 27 are rejected under 35 U.S.C. § 102(b) as being anticipated by WO 00/63992 ("Brambilla") for reasons listed on pages 4-12 of the Office Action. In particular, regarding claim 1, the Examiner asserts that "the gaskets shown in figs. 5 and 6, with a plurality of fluid injection calibrated holes [15] would necessarily correspond to that of the bipolar plate as well." Office Action at 5. Applicants respectfully disagree.

First, numeral [15] in Brambilla refers to "channels for the injection of water." Brambilla at page 10, line 13. Figures 4-6 also show numeral [15] as the channel in the gasket. *Id.* at Figures 4-6. To the extent that Figures 4-6 depicts an opening in the gasket (possibly for the passage of water), Applicants disagree that there is necessarily a corresponding opening in the bipolar plate. For example, the bipolar plate may be small in size than the gasket or may have a cut-out so that the opening in the gasket is outside the boundary of the bipolar plate the gasket and the bipolar plate match together.

Nevertheless, Applicants further amended claim 1 to more clearly point out and distinctly claim what Applicants consider the invention. Brambilla does not disclose a calibrated hole in a bipolar plate that "wherein one end of the calibrated hole opens to a source of water on one side of said conductive bipolar plate and the other end of the calibrated hole opens to an adjacent chamber on the other side of said conductive

bipolar plate, so that the water flows from one side of the bipolar plate through the calibrated hole to the adjacent chamber,” as claim 1 recites. Assuming that we may infer from the drawing in Brambilla a hole in the bioplar plate that is aligned with the opening in the gasket, that hole only connects a source of cooling fluid and the channel [15] in the gasket. Brambilla at page 10, line 13, and Figures 4-6. The channel [15] in the gasket directs water to the active area in the reaction cell. *Id.*

For at least these reasons, Applicants submit that Brambilla fails to teach each and every element in claim 1. Applicants respectfully request the withdrawal of this rejection.

VII. Claim Rejections under 35 U.S.C. § 103

Claims 1, 3, 5-12, 14-20, 22, 24, and 27 are rejected under 35 U.S.C. § 103(a) as unpatentable over US 2002/0142201 (“Nelson”) in view of US Patent No. 5,482,792 (“Faïta”) for reasons listed on pages 12-33 of the Office Action. The Examiner maintains that “intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art.” Office Action at 13. Applicants submit that at least one such structural difference exists. Specifically, Applicants note that the water injection ports in Nelson connect a source of cooling water with cooling channels (see Nelson, paragraph [0036]), while the fluid injection calibrated holes recited in the instant claims connect an anode or a cathode chamber in the reaction cell and a source of a cooling fluid. See claim 1.

Specifically, “[w]ater inlet ports 58a, 58b, 58c, 58d are positioned near the beginning 52a, 52b, 52c, and 52d of the coolant channels 38a, 38b, 38c, 38d to

introduce water to the coolant air in the coolant channels 38a, 38b, 38c, 38d." Nelson at paragraph [0036]. "The coolant channels 38 of the anode cooler plate and the coolant channels of the cathode cooler plate of an adjacent fuel cell are matched so that the coolant channels form conduits [for the cooling air] when the fuel cells are pressed together in the fuel cell stack." *Id.* at [0033]. The cooling channels are not in the anodic or cathodic chamber of a fuel cell. For this reason alone, Nelson does not teach or suggest fluid injection calibrated holes as recited in claim 1.

Moreover, one skilled in the art would not have added a reticulate material in the fuel cell of Nelson. The fuel cell of Nelson comprises cathode plates and anode plates having serpentine gas channels. See Nelson at paragraphs [0028], [0030], and Figures 6A-6C. These channels serve to distribute gas across the reactant surface 27. *Id.* at paragraph [0028]. No additional gas distribution means is required in Nelson. Further, the serpentine channels are in contact with the membrane electrode assembly (18) to form electrical contact. *Id.* at paragraph [0027] and Figure 1. No additional means to establish electrical contact is required. It would have been redundant to add reticulate materials between the cathode (or the anode) plate and the membrane electrode assembly (18) in Nelson. For at least this reason, one skilled in the art would not have combined the teachings in Nelson and Fiata as suggested by the Examiner.

Therefore, Applicants submit that the Examiner has not established a case of *prima facie* obviousness with regard to claim 1. Since claims 3, 5-12, 14-20, 22, 24, and 27 are all dependent from claim 1, they are not obvious over the references for at least the reasons claim 1 is not obvious. Applicants respectfully request the withdrawal of this rejection.

VIII. Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read 'M. Sweet', written over a horizontal line.

Dated: April 8, 2009

By: _____
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